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Application Number	09/903,378
Filing Date	July 10, 2001
First Named Inventor	CHIRINO, Arthur J.
Group Art Unit	1645
Examiner Name	
Attorney Docket Number	A-69566-1/RFT/RMS/RMK

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U.S. PATENT DOCUMENTS

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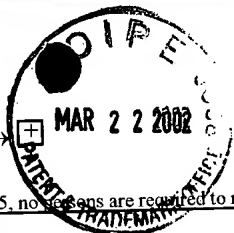
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
MM	C1	ABRAMS, S.I. and SCHLOM, J., "Rational antigen modification as a strategy to upregulate or downregulate antigen recognition," <i>Curr Opin Immunol.</i> 2000 Feb;12(1):85-91	
	C2	ALTUVIA, Y. et al., "A structure-based algorithm to predict potential binding peptides to MHC molecules with hydrophobic binding pockets," <i>Hum Immunol.</i> 1997 Nov;58(1):1-11	
	C3	ANDERTON, S.M. et al., "Therapeutic potential of TCR antagonists is determined by their ability to modulate a diverse repertoire of autoreactive T cells," <i>Eur J Immunol.</i> 1999 Jun;29(6):1850-7	
	C4	BOESTEANU, A. et al., "A molecular basis for how a single TCR interfaces multiple ligands," <i>J Immunol.</i> 1998 Nov 1;161(9):4719-27	
	C5	BOWIE, J.U. et al., "A method to identify protein sequences that fold into a known three-dimensional structure," <i>Science.</i> 1991 Jul 12;253(5016):164-70	
	C6	BRUSIC, V., et al., "MHCPEP, a database of MHC-binding peptides: update 1997," <i>Nucleic Acids Res.</i> 1998 Jan 1;26(1):368-71	
	C7	BRUSIC, V., et al., "Prediction of MHC class II-binding peptides using an evolutionary algorithm and artificial neural network," <i>Bioinformatics.</i> 1998;14(2):121-30	
	C8	BUTTINELLI, G., et al., "Antigenic sites of poliovirus type 3 eliciting IgA monoclonal antibodies in orally immunized mice," <i>Virology.</i> 2001 Mar 15;281(2):265-71	
	C9	BUUS, S., "Description and prediction of peptide-MHC binding: the 'human MHC project'," <i>Curr Opin Immunol.</i> 1999 Apr;11(2):209-13	
	C10	CHICZ, R.M. et al., "Predominant naturally processed peptides bound to HLA-DR1 are derived from MHC-related molecules and are heterogeneous in size," <i>Nature.</i> 1992 Aug 27;358(6389):764-8	
	C11	CORREIA-NEVES, M. et al., "Amino acids specifying MHC class preference in TCR V alpha 2 regions," <i>J Immunol.</i> 1999 Nov 15;163(10):5471-7	
	C12	DAHIYAT, B.I. and MAYO, S.L., "De novo protein design: fully automated sequence selection," <i>Science.</i> 1997 Oct 3;278(5335):82-7	
	C13	de LALLA, C. et al., "Cutting edge: identification of novel T cell epitopes in Lol p5a by computational prediction," <i>J Immunol.</i> 1999 Aug 15;163(4):1725-9	
	C14	DESJARLAIS, J.R. and HANDEL, T.M., "De novo design of the hydrophobic cores of proteins," <i>Protein Sci.</i> 1995 Oct;4(10):2006-18	
	C15	FLECKENSTEIN, B. et al., "New ligands binding to the human leukocyte antigen class II molecule DRB1*0101 based on the activity pattern of an undecapeptide library," <i>Eur J Biochem.</i> 1996 Aug 15;240(1):71-7	
	C16	FREMONT, D.H., et al., "Crystal structures of two viral peptides in complex with murine MHC class I H-2Kb," <i>Science.</i> 1992 Aug 14;257(5072):919-27	
	C17	GULUKOTA, K. et al., "Two complementary methods for predicting peptides binding major histocompatibility complex molecules," <i>J Mol Biol.</i> 1997 Apr 18;267(5):1258-67	
MM	C18	HAMMER, J. et al., "Precise prediction of major histocompatibility complex class II-peptide interaction based on peptide side chain scanning," <i>J Exp Med.</i> 1994 Dec 1;180(6):2353-8	

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First Named Inventor	CHIRINO, Arthur J.
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mm	C19	HAMMER, J. et al., "High-affinity binding of short peptides to major histocompatibility complex class II molecules by anchor combinations." <i>Proc Natl Acad Sci U S A</i> . 1994 May 10;91(10):4456-60	
	C20	HAMMER, J. "New methods to predict MHC-binding sequences within protein antigens." <i>Curr Opin Immunol</i> . 1995 Apr;7(2):263-9	
	C21	HAMMER, J. et al., "Rules governing peptide-class II MHC molecule interactions." <i>Behring Inst Mitt</i> . 1994 Jul;(94):124-32	
	C22	HARBURY, P.B. et al., "Repacking protein cores with backbone freedom: structure prediction for coiled coils." <i>Proc Natl Acad Sci U S A</i> . 1995 Aug 29;92(18):8408-12	
	C23	HELLINGA, H.W. and RICHARDS, F.M. "Optimal sequence selection in proteins of known structure by simulated evolution." <i>Proc Natl Acad Sci U S A</i> . 1994 Jun 21;91(13):5803-7	
	C24	HEMMER, B. et al., "Predictable TCR antigen recognition based on peptide scans leads to the identification of agonist ligands with no sequence homology." <i>J Immunol</i> . 1998 Apr 15;160(8):3631-6	
	C25	HIEMSTRA, H.S. et al., "Antigen arrays in T cell immunology." <i>Curr Opin Immunol</i> . 2000 Feb;12(1):80-4	
	C26	HOLLON, T., "Exposing Epitopes Without Exposing People," <i>The Scientist</i> 15(11):14, May 28, 2001	
	C27	HONEYMAN, M.C. et al., "Neural network-based prediction of candidate T-cell epitopes," <i>Nat Biotechnol</i> . 1998 Oct;16(10):966-9	
	C28	JONES, D.T. "De novo protein design using pairwise potentials and a genetic algorithm." <i>Protein Sci</i> . 1994 Apr;3(4):567-74	
	C29	KONO, H. and DOI, J. "Energy minimization method using automata network for sequence and side-chain conformation prediction from given backbone geometry." <i>Proteins</i> . 1994 Jul;19(3):244-55	
	C30	LAM, K.S. et al., "A new type of synthetic peptide library for identifying ligand-binding activity," <i>Nature</i> . 1991 Nov 7;354(6348):82-4	
	C31	LAROCHE, Y. et al., "Recombinant staphylokinase variants with reduced antigenicity due to elimination of B-lymphocyte epitopes," <i>Blood</i> . 2000 Aug 15;96(4):1425-32	
	C32	MADDEN, DR., "The three-dimensional structure of peptide-MHC complexes," <i>Annu Rev Immunol</i> . 1995;13:587-622	
	C33	MALCHEREK, G. et al., "Analysis of allele-specific contact sites of natural HLA-DR17 ligands," <i>J Immunol</i> . 1994 Aug 1;153(3):1141-9	
	C34	MALLIOS, RR. "Iterative stepwise discriminant analysis: a meta-algorithm for detecting quantitative sequence motifs." <i>J Comput Biol</i> . 1998 Winter;5(4):703-11	
	C35	MALLIOS, RR. "Class II MHC quantitative binding motifs derived from a large molecular database with a versatile iterative stepwise discriminant analysis meta-algorithm." <i>Bioinformatics</i> . 1999 Jun;15(6):432-9	
mm	C36	MARVIN, J.S. and HELLINGA, H.W., "Conversion of a maltose receptor into a zinc biosensor by computational design," <i>Proc Natl Acad Sci U S A</i> . 2001 Apr 24;98(9):4955-60	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/903,378
		Filing Date	July 10, 2001
		First Named Inventor	CHIRINO, Arthur J.
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Sheet 4 of 5	Attorney Docket Number	A-69566-1/RFT/RMS/RMK	

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mtg	C37	MEISTER, G.E., et al., "Two novel T cell epitope prediction algorithms based on MHC-binding motifs; comparison of predicted and published epitopes from Mycobacterium tuberculosis and HIV protein sequences," <i>Vaccine</i> . 1995 Apr;13(6):581-91	
	C38	MEYER, D.L. et al., "Reduced antibody response to streptavidin through site-directed mutagenesis," <i>Protein Sci</i> . 2001 Mar;10(3):491-503	
	C39	FRAZER, J.K. and CAPRA, J.D., "Immunoglobulins: Structure and Function." in <i>Fundamental Immunology Fourth Edition</i> , PAUL, W.E. (ed.), Lippincott-Raven Publishers, Philadelphia, 1999, Chapter 3, pp. 37-74	
	C40	MARGULES, D.H., "The Major Histocompatibility Complex," in <i>Fundamental Immunology Fourth Edition</i> , PAUL, W.E. (ed.), Lippincott-Raven Publishers, Philadelphia, 1999, Chapter 8, pp. 263-285	
	C41	BENOIST, C. and MATHIS, D., "T-Lymphocyte Differentiation and Biology," in <i>Fundamental Immunology Fourth Edition</i> , PAUL, W.E. (ed.), Lippincott-Raven Publishers, Philadelphia, 1999, Chapter 11, pp. 367-409	
	C42	PEREZ, M., "cDNA cloning and immunological characterization of the rye grass allergen Lol p I," <i>J Biol Chem</i> . 1990 Sep 25;265(27):16210-5	
	C43	RAMMENSEE, H. et al., "SYFPEITHI: database for MHC ligands and peptide motifs," <i>Immunogenetics</i> . 1999 Nov;50(3-4):213-9	
	C44	ROBERTS, C.G. et al., "Prediction of HIV peptide epitopes by a novel algorithm," <i>AIDS Res Hum Retroviruses</i> 1996 May 1;12(7):593-610	
	C45	RUDENSKY, A et al., "Sequence analysis of peptides bound to MHC class II molecules." <i>Nature</i> . 1991 Oct 17;353(6345):622-7	
	C46	SAROBÉ, P. et al., "Enhanced in vitro potency and in vivo immunogenicity of a CTL epitope from hepatitis C virus core protein following amino acid replacement at secondary HLA-A2.1 binding positions." <i>J Clin Invest</i> . 1998 Sep 15;102(6):1239-48	
	C47	SAVOIE, C.J. et al., "Use of BONSAI decision trees for the identification of potential MHC class I peptide epitope motifs." <i>Pac Symp Biocomput</i> . 1999;182-9	
	C48	SCHWARTZ, H.L. et al., "High-resolution autoreactive epitope mapping and structural modeling of the 65 kDa form of human glutamic acid decarboxylase," <i>J Mol Biol</i> . 1999 Apr 16;287(5):983-99	
	C49	SETTE, A. et al., "Binding of major histocompatibility complex class II to the invariant chain-derived peptide, CLIP, is regulated by allelic polymorphism in class II," <i>J Exp Med</i> . 1995 Feb 1;181(2):677-83	
	C50	SHASTRI, N., "Single T cell probes for antigen/MHC expression," <i>Curr Opin Immunol</i> . 1995 Apr;7(2):258-62	
	C51	SHASTRI, N., "Needles in haystacks: identifying specific peptide antigens for T cells." <i>Curr Opin Immunol</i> . 1996 Apr;8(2):271-7	
	C52	SIDNEY, J. et al., "Measurement of MHC/Peptide Interactions by Gel Filtration," in <i>Current Protocols in Immunology</i> , Coligan, J.E. et al. (eds.), John Wiley and Sons (1998) 18.3.1-18.3.19	
mtg	C53	SIDNEY, J. et al., "Definition of a DQ3.1-specific binding motif." <i>J Immunol</i> . 1994 May 1;152(9):4516-25	

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